REMARKS

Claims 1, 2, 4, 7-12, and 14 are pending in the application. Claims 4 and 14 are canceled. Claims 1, 11, and 12 have been amended. Amendments to the claims should in no way be construed as an acquiescence to any of the Examiner's rejections. Such amendments are submitted solely to more particularly point out and distinctly claim the invention and to expedite the prosecution of the application. Applicant reserves the right to pursue the claims as originally filed in this or a separate application(s). Support for the amendments to claims 1, 11 and 12 can be found in previous claims 4 and 14 and throughout the specification, and specifically, for example, in paragraphs [0076] and [0158].

In light of the claim amendments and the following remarks, Applicant respectfully requests that the Examiner withdraw the rejections and pass this case to issuance.

Priority

The Office Action states that application serial nos. 60/116,748, 60/127,142 and parent application no. 09/491,896 fail to provide an enabling disclosure for the invention claimed in claims 1, 2, 4-12 and 14 to the extent that *NMDA receptor antigens* other than *NMDAR-1* antigens are encompassed by the claims. Applicant disagrees with this assessment, and submits that the priority documents do provide adequate support for the amended claims under 35 U.S.C. § 119(e) and 120.

However, to expedite prosecution, each of the independent claims have been amended to recite a vector encoding for an **NMDAR-1** antigen – subject matter that the Office Action acknowledges is fully supported and enabled by the priority documents.

Rejection Under 35 U.S.C. § 112, First Paragraph, Enablement

Claims 1, 2, 4, 7-12, and 14 stand rejected under 35 U.S.C. § 112, first paragraph, because the specification "does not reasonably provide enablement for a composition comprising any vector encoding any NMDA receptor antigen, nor for a method of modulating or delaying

onset of epilepsy, stroke, or decreased cognition in any subject, by administration of any vector encoding any NMDA receptor antigen."

Again, each of the independent claims has now been amended to recite a vector encoding for an ***NMDAR-1*** antigen, thereby obviating this ground for rejection. (Claims 4 and 14, which had previously been drawn to the NMDAR-1 antigen, specifically, have now been canceled as redundant.)

The Office Action also states that "a method of modulating or delaying onset of epilepsy, stroke, or decreased cognition in any subject" is not enabled. However, the Office Action acknowledges that the specification is enabled for "ameliorating brain damage associated with epilepsy or stroke....". In response, the "whereby" clause of claim 12 has been amended to specify that the claimed method produces *NMDAR-1 antibodies* in a circulatory system of the subject which bind to an *NMDAR-1 antigen* in the central nervous system to *ameliorate epilepsy or stroke* in the subject.

Applicant respectfully disagrees to the extent that the latest Office Action suggests that the claims are only enabled for a single vector (AAV). A skilled artisan would be familiar with the use and modification of vectors, generally. Moreover, several alternative vectors and methods of delivery are listed in section IV "Delivery Systems" of the specification, paragraphs [0135]-[0148]. In addition, the specification cites numerous references that have been incorporated by reference to enable the use of different vectors.

Applicant also respectfully disagrees with the suggestion that the claims are enabled only for the treatment of rats. The working examples in the specification do *not* represent the only enabled embodiment of Applicant's underlying inventive concept, but are provided merely as *illustrative* of the underlying inventive concept of Applicant's invention. MPEP 2173.02 states that it is generally considered improper to read limitations contained in the specification into the claims. See *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969) and *In re Winkhaus*, 527 F.2d 637, 188 USPQ 129 (CCPA 1975), which discuss the premise that one cannot rely on the specification to impart limitations to the claim that are not recited in the claim.

Furthermore, Applicant has enabled the invention since the claimed invention was demonstrated in animal models accepted by those skilled in the art. MPEP 2164.02 states that "[a]n *in vitro* or *in vivo* animal model example in the specification, in effect, constitutes a 'working example' if that example 'correlates' with a disclosed or claimed method invention." An animal model is acceptable where it is ***recognized in the art*** that this model correlates to a specific condition. If this has not yet been established in the art, the animal model is acceptable if one skilled in the art would accept the model as *reasonably correlating* to the condition. As Applicant has demonstrated the neuroprotective effect using well established and art recognized animal models, the claimed invention is enabled.

For at least these reasons, Applicant requests that the rejections under 35 U.S.C. §112, first paragraph, be withdrawn.

Rejection of Claims 1, 2, 4,7, 8, and 10 Under 35 U.S.C. §103(a)

Claims 1, 2, 4, 7, 8, and 10 have been rejected under 35 U.S.C. § 103(a), as being unpatentable over Lissin *et al.* (PNAS 95: 7097-7102 (1998)) in view of Kammescheidt et al. (1996). Applicant respectfully traverses this rejection.

Lissin describes *increasing expression* of NMDA receptors in hippocampal neurons using adenoviral expression to *increase the number of receptors and their signal transduction activity.* Nowhere in Lissin is there any suggestion that inhibiting NMDA receptor activity can have a therapeutic effect. In fact, Lissin's focus is to *increase NMDA activity* as a method of elucidating NMDA receptor signaling from other receptors found in neuronal synpases, effectively teaching away from a composition that would *elicit production of NMDA receptor-1 antibodies* for inhibiting NMDA activity. There is no suggestion or teaching in the reference that would encourage one skilled in the art to produce "a composition *to inhibit NMDA activity*" as recited in claim 1.

The Examiner asserts that "Lissin need not teach inhibiting NMDA activity because the claims are directed to the compositions and Lissin teaches the compositions." However, the composition of Lissin is not the same as the composition of claim 1 since Lissin's composition does not comprise a nucleic acid sequence *encoding for an NMDAR-1 antigen* to elicit

production of NMDA receptor-1 antibodies that *inhibit NMDA activity*. The Examiner's argument is essentially an inherency argument and the Office Action fails to demonstrate that Lissin's compositions would necessarily function for a purpose (antibody production) that is not at all suggested or taught.

In addition, the combination with Kammescheidt, which is directed to viral transduction of hippocampal cells, does not overcome the deficiencies of Lissin since there are still no teachings or suggestions of a composition to *elicit production of NMDA receptor-1 antibodies* that *inhibit NMDA activity*. Accordingly, the Examiner is respectfully requested to withdraw the obviousness rejections as to claims 1,2, 7-8 and 10.

Applicant notes with appreciation that there are no prior art rejections against claims 9, 11 and 12.

CONCLUSION

In view of the above remarks, Applicants' respectfully request reconsideration and allowance of the application. The Examiner is invited to call the undersigned at (617) 439-2948 if there are any questions. In the event that the amendments do not place this case in condition for allowance, entry of the amendments and a further advisory action are requested to facilitate appeal.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 141449, under Order No. 106604-7.

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Respectfully submitted,

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